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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,589	07/29/2002	Jinhua Huang	124615	5120

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EXAMINER


VARGAS, DIXOMARA

ART UNIT	PAPER NUMBER
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2859

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/064,589	Applicant(s) HUANG ET AL.	
	Examiner Dixomara Vargas	Art Unit 2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-10,12-27 and 29-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-10,12-27 and 29-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
3. Claims 1-3, 5-10, 12-21, 23-26 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. (US 6,275,128 B1) in view of Rimkunas et al. (US 6,566,991 B1).

With respect to claims 1, 6, 16 and 30, Aoki discloses a magnetic field shimming system for an MRI magnetic field generating assembly, the magnetic field shimming system comprising (Figure 2, #10): a plurality of shims secured relative to a surface of the magnetic field generating assembly (Figures 1 and 2; #15) to at least partially correct inhomogeneities in a magnetic field generated by the magnetic field generating assembly (Abstract), said plurality of shims being

arranged along a plurality of concentric geometric shapes (Columns 3-4, lines 65-67 and 1-7 respectively)

Aoki discloses the claimed invention as stated above except for a system wherein the plurality of shims arranged along a geometric shapes includes a first shim having a first amount of material and a second shim having a second amount of material. However, Rimkunas discloses a system wherein the plurality of shims arranged along a geometric shapes includes a first shim having a first amount of material and a second shim having a second amount of material (Columns 7-8, lines 35-67 and 1-2 respectively; Figure 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Rimkunas's teachings about a system wherein the plurality of shims arranged along a geometric shapes includes a first shim having a first amount of material and a second shim having a second amount of material with Aoki's magnetic field shimming system for an MRI magnetic field generating assembly for the purpose of maximizing the strength and uniformity of the magnetic field as shown by Rimkunas (Column 2, lines 34-67).

4. With respect to claims 2 and 7, Aoki discloses at least one shim in said plurality of shims is directly coupled to a surface (Figures 1-2).

5. With respect to claims 3 and 8, Aoki discloses said plurality of shims are secured relative to said surface by a shim holder (Figure 2, #13).

6. With respect to claims 5, 9, 10, 12, 15, 17 and 20, Aoki discloses at least one shim in said plurality of shims is a flat plate of magnetic material, said flat plate including a top edge, a bottom edge, side edges (Figure 2, #14 and #11), and face surfaces (Figure 2, #13), and wherein said at least one shim (Figure 2, #12) is arranged such that said bottom edge is a proximal

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portion of said flat plate relative to said surface (Figure 2), said top edge is a distal portion of said flat plate relative to said surface, and said face surfaces are aligned with a direction of the magnetic field generated by the magnetic field generating assembly (Figures 1-2).

7. With respect to claims 13 and 18, Aoki discloses selecting a height of said at least one shim to at least partially correct inhomogeneities in the magnetic field generated by said magnetic field generating assembly, said height being a distance between said top edge and said bottom edge (Columns 3-4, lines 49-67 and 1-7 respectively).

8. With respect to claims 14 and 19, Aoki discloses selecting a width of said at least one shim to at least partially correct inhomogeneities in the magnetic field generated by said magnetic field generating assembly, said width being a distance between said side edges (Columns 3-4, lines 49-67 and 1-7 respectively).

9. With respect to claims 21 and 23, see rejection of claims 1 and 4 above.

10. With respect to claim 24, Aoki discloses said at least one shim (Figure 2, #12) is secured relative to said surface by a shim holder (Figure 2, #13), said shim holder including a holder disk having a slot disposed therein, said slot receiving said at least one shim (Figure 2).

11. With respect to claim 25, Aoki discloses said shim holder further includes a cover disk to secure said shim within said slot of said holder disk (Figure 2, #14).

12. With respect to claim 26, Aoki discloses said at least one shim is secured directly to said surface (Figure 2).

13. With respect to claim 29, Aoki discloses each of said plurality of shims have a shape other than the shape of said plurality of concentric geometric shapes (Column 3, lines 53-63).

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14. With respect to claim 30, Aoki discloses said plurality of shims arranged along one of said plurality of concentric geometric shapes includes a permanent magnet, a magnetic material other than a permanent magnetic, or any combination comprising at least one each of the foregoing materials (Column 3, lines 53-63).

15. Claims 22 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. (US 6,275,128 B1) and Rimkunas et al. (US 6,566,991 B1) in further view of Rapoport (US 6,670,877 B2).

With respect to claim 22, Aoki and Rimkunas disclose the claimed invention as stated above in paragraph 3 except for the concentric geometric shapes each having at least five sides. However, Rapoport discloses said shapes being pentagon, hexagon, heptagon or octagon (Columns 6-7, lines 66-67 and 1-4 respectively; Figures 9 and 10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Rapoport's teachings about the shimming means geometries with Aoki and Rimkunas' magnetic field shimming system for an MRI magnetic field generating assembly for the purpose of allowing a maximum opportunity and variation for adjusting the strength and uniformity of the magnetic field as shown by Rapoport (Column 7, lines 15-25).

16. With respect to claim 27, see rejection of claims 1, 12 and 22 above.

Response to Arguments

17. Applicant's arguments with respect to claims 1-31 have been considered but are moot in view of the new ground(s) of rejection.

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18. The indicated allowability of claim 31 is withdrawn in view of the newly discovered reference(s) to Rimkunas et al. (US 6,566,991 B1). Rejections based on the newly cited reference(s) above. Therefore, applicant's request for reconsideration of the finality of the rejection of the last Office action is considered and, thereby, the finality of that action is withdrawn.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dixomara Vargas whose telephone number is (571) 272-2252. The examiner can normally be reached on 8:00 am. to 4:30 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dixomara Vargas
Art Unit 2859
June 16, 2004



Diego Gutierrez
Supervisory Patent Examiner
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